THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A linear position sensor, comprising:

a rigid linear guide having a first end, a second end and being made of a conductive material;

a follower having a central aperture, the follower being positioned with the linear guide passing through the central aperture, the follower being of a material that is one of a magnet or subject to influence by a magnet;

a TDR instrument at one end of the linear guide, the TDR instrument being adapted to send a TDR signal parallel to the linear guide which is directed at the follower, the TDR instrument receiving a return signal reflected from the follower which indicates the linear positioning of the follower; and

at least one magnet adapted for mounting on an object, the follower being magnetically influenced through one of attraction or repulsion to the at least one magnet to such an extent that the follower follows the movement of the at least one magnet, whereby the linear positioning of the follower provides an accurate indication of the linear positioning of the at least one magnet mounted to the object.

2. The linear position sensor as defined in Claim 1, wherein the follower is of a material that is subject to influence by a magnet and the follower is magnetically attracted to the at least one magnet.

3. The linear position sensor as defined in Claim 1, wherein the follower is a magnet and is magnetically attracted to the at least one magnet.

4. The linear position sensor as defined in Claim 1, wherein

the follower is a magnet and is magnetically repulsed by the at least one magnet.

5. The linear position sensor as defined in Claim 1, wherein the follower is annular.

6. The linear position sensor as defined in Claim 1, wherein the linear guide is one of a metal rod or a tensioned metal cable.

7. The linear position sensor as defined in Claim 1, wherein the linear guide is in a vertical orientation.

8. The linear position sensor as defined in Claim 1, wherein a protective tubular housing overlies the linear guide with follower, the tubular housing having an interior bore sized to allow the follower unfettered axial movement of along the linear guide.

9. The linear position sensor as defined in Claim 8, wherein the housing is made from a conductive material.

10. The linear position sensor as defined in Claim 1, wherein the object is a liquid level indicator mounted to an exterior of a liquid storage tank.

11. The linear position sensor as defined in Claim 1, wherein the object is a fluid level indicator adapted to float on top of one of a liquid or a liquefied gas in a fluid storage tank.

12. The linear position sensor as defined in Claim 8, wherein the object is a float which surrounds the tubular housing.

13. A linear position sensor, comprising:

a rigid linear guide having a first end, a second end, and being made of a conductive material;

a follower having a central aperture, the follower being positioned with the linear guide passing through the central aperture, the follower being of a material that is attracted to a magnet;

a TDR instrument at one end of the linear guide, the TDR instrument being adapted to send a TDR signal parallel to the linear guide which is directed at the follower, the TDR instrument receiving a return signal reflected from the follower which indicates the linear positioning of the follower;

a fluid impervious protective conductive tubular housing overlies the linear guide with follower, the tubular housing having an interior bore sized to allow the follower unfettered axial movement along the linear guide; and

a float having a central aperture, the float being positioned with the tubular housing passing through the central aperture, the float being adapted to float on liquid and rise and fall along a path defined by the tubular housing, the float having at least one magnet, the follower being magnetically attracted to the at least one magnet to such an extent that the follower follows the movement of the at least one magnet, whereby the linear positioning of the follower provides an accurate indication of the linear positioning of the at least one magnet mounted to the float.

14. A method of linear position sensing of an object using TDR, comprising the steps of:

mounting a rigid linear guide immediately adjacent and parallel to a linear path along which an object travels, the linear guide having a first end, a second end, and being made of a conductive material;

providing a follower having a central aperture and positioning the follower with the linear guide passing through the central aperture, the follower being of a material that is attracted to a magnet;

positioning a TDR instrument at one end of the linear guide, the TDR instrument being adapted to send a TDR signal parallel to the linear guide which is directed at the follower, the TDR instrument receiving a return signal reflected from the follower which indicates the linear positioning of the follower;

mounting at least one magnet on the object, the follower being magnetically attracted to the at least one magnet to such an extent that the follower follows the movement of the at least one magnet, the linear positioning of the follower providing an accurate indication of the linear positioning of the at least one magnet mounted to the object.

15. A linear position sensor, comprising:

a rigid linear guide having a first end, a second end, and being one of a metal rod or a tensioned metal cable, the linear guide being positioned in a vertical orientation;

an annular follower having a central aperture, the follower being positioned with the linear guide passing through the central aperture, the follower being of a material that is attracted to a magnet;

a TDR instrument at one end of the linear guide, the TDR instrument being adapted to send a TDR signal parallel to the linear guide which is directed at the follower, the TDR instrument receiving a return signal reflected from the follower which indicates the linear positioning of the follower;

a protective conductive tubular housing overlying the linear guide with follower, the tubular housing having an interior bore sized to allow the follower unfettered axial movement along the linear guide; and

at least one magnet adapted for mounting on an object, the follower being magnetically attracted to the at least one magnet to such an extent that the follower follows the movement of the at least one magnet, whereby the linear positioning of the follower provides an accurate indication of the linear positioning of the at least one magnet mounted to the object.

16. The linear position sensor as defined in Claim 15, wherein the object is a liquid level indicator mounted to an exterior of a tank.

17. The linear position sensor as defined in Claim 15, wherein the object is a fluid level indicator adapted to float on top of one of a liquid or a liquefied gas.

18. The linear position sensor as defined in Claim 17, wherein the fluid level indicator surrounds the tubular

housing.

19. The linear position sensor as defined in Claim 15, wherein the TDR instrument is connected to a communications link to allow remote monitoring of the position of the object.

20. A linear position sensor, comprising:

a rigid linear guide having a first end, a second end and being made of a conductive material;

a magnetic follower having a central aperture, the follower being positioned with the linear guide passing through the central aperture, the magnetic follower having opposed magnetic poles;

a TDR instrument at one end of the linear guide, the TDR instrument being adapted to send a TDR signal parallel to the linear guide which is directed at the follower, the TDR instrument receiving a return signal reflected from the follower which indicates the linear positioning of the follower; and

a magnet adapted for mounting on an object, the magnet having opposed magnetic poles, the poles of the follower and the magnet being respectively oriented so that the follower is magnetically repelled by the magnet to such an extent that the follower follows the movement of the magnet, whereby the linear positioning of the follower provides an accurate indication of the linear positioning of the magnet mounted to the object.

21. The linear position sensor as defined in Claim 20, wherein the follower is annular.

22. The linear position sensor as defined in Claim 20, wherein the linear guide is one of a metal rod or a tensioned metal cable.

23. The linear position sensor as defined in Claim 20, wherein the linear guide is in a vertical orientation.

24. The linear position sensor as defined in Claim 23, wherein the follower has a low friction coating.